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ABSTRACT

This paper reviews recent publications on distance education and explores its promise and potential from the student's perspective, the faculty's perspective and the administrator's perspective. Findings indicate that only the self-motivated and self-disciplined students are most likely to succeed in distance education. Although the majority of the research concludes that there is no significant difference between distance learning and traditional learning, this is still open to debate. Faculty support is mixed. The fundamental reason is the lack of faculty involvement in the dominant administrator-centered advocacy. Successful distance education programs need to maintain a high level of faculty involvement. Administrators consider distance education as an important revenue source. In the foreseeable future, however, distance education cannot become a new revenue source, given its time- and labor-intensiveness and the cost of installation of new technology. The examination of two notable programs (the Learning Network at SUNY and the University of California Extension's On-Line Writing programs) confirmed these findings. (Contains 38 references and a figure listing 16 online journals and Web sites focusing on the distance education debate.) (Author/RS)

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Distance Education: Pros, Cons, and the Future

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Abstract

This paper reviews the recent publications and researches on distance education and explores its promise and potential from the student's perspective, the faculty's perspective and the administrator's perspective. Our findings indicate that only the self-motivated and self-disciplined students are most likely to succeed in distance education. Although the majority of the researches conclude that there is no significant difference between distance learning and traditional learning, the conclusion is still open to debate.

Faculty support is mixed. The fundamental reason is the lack of faculty involvement in the dominant administrator-centered advocacy. Successful distance education programs need to maintain a high level of faculty involvement.

Administrators consider distance education as an important revenue source. In the foreseeable future, however, distance education cannot become a new revenue source, given its time- and labor-intensiveness and the cost of installation of new technology. Our examination of two notable programs confirmed our findings.

Introduction

Our present information society has an increasing need for skilled professionals and technicians, which has led to an exploding demand for life-long education. In this trend, distance education is often considered as an alternative to accommodate increasing enrollments of young people and returning students. Not surprisingly, the last decade witnessed an explosion of distance education programs.

In this paper, we will review the literature and examine the promise and potential for distance education and explore the reason why some notable programs work well. Specifically, we will look at the distance program from the student's perspective to see what kind of students are most likely to be successful in online learning and also to compare the online and traditional learning, from the faculty's perspective to examine why some faculty are supportive while others protest against distance education, and from the administration's perspective to find out what should be the realistic goals for the administration to achieve. Finally, we will examine the Learning Network at SUNY and the University of California Extension's On-line Writing Programs to see why they work well.

Distance Education: Promise and Potential

Distance education can mean any form of education that geographically separates the instructor and students, requiring communication through media (Spooner, Jordan & Algozzine, 1999). Traditionally, this includes a wide range of activities, from the correspondence program based on postal sources, courses broadcast over the radio, or distributing video lectures or related material to aid in instruction. Today, greater

attention has focused on the Internet-based distance education.

General Benefits of Distance Education

Some of the key strengths of the Internet-based distance education rest in its capacity to provide "anywhere" and "anytime" education to learners/students. Online learning provides an alternative for education, especially for those who cannot enroll in the program otherwise. The popular image of a typical distance learner is the non-traditional student, such as a working mother (or overburdened single parent), who can only find time to log on the website after finishing work. Alternatively, the distance learner is viewed as a person who travels for weeks at a time and thus cannot attend the courses on campus, not even weekend courses. With adults having to update their knowledge and skills constantly, the adult learners become one of the fastest growing markets in higher education (Worley, 2000). It is not surprising that adult learners become the target group in distance education programs.

Online learning also provides opportunities for employee training (Stellin, 2001). In the employers' eyes, online training is less expensive and more accessible to workers. This might be the reason that Circuit City decided in 2000 to use e-learning to train its employees through DigitalThink, a San Francisco-based e-learning company.

Explosion of distance education.

The Internet-based distance education has become an increasingly popular channel to recruit new students and train employees-- for a host of reasons. In 1993, fewer than 100 colleges and universities delivered Internet-based courses. By 1999, however, nearly two-thirds of the 3,200 accredited 4-year colleges and graduate schools offered

Internet-based courses, with MBA program playing a leading role in this explosion (Arbaugh, 2000). In 1999, the U.S Department of Education reported that 87 percent of major public institutions (with over 10,000 students) provided distance classes primarily through Internet (Lewis, Snow, Farris & Levin, 1999). The results of the survey also indicated that there was a 72% increase in distance education programs from 1994-95 to 1997-98, with another 20% of the institutions surveyed planning to launch a new program within the next three years. The number of students who were in distance education courses was estimated to be over 1.6 million in 1997-98.The percentage of using the Internet-based technology increased from 22% to 50% since 1994-95 while the use of all other technologies has declined in recent years.

The online learners are estimated to grow very rapidly in the next few years. Within the first ten years of the 21st century, more than 5 million new students are estimated to attend higher education programs in Europe and the US (Dumort, 2000). Online education is expected to provide an alternate approach to satisfy the demand of higher education. The low-cost diffusion of Internet technologies, new student-centered pedagogical thinking, increasing political commitment, competition among educational institutions and other factors will continue to drive the online education forward.

Along with the amazing numbers, politicians such as the former vice president Al Gore and Utah Governor Mike Leavitt, and university administrators enthusiastically promote distance education. Governor Leavitt asserted, " In the future… an institution of higher education will become a little like a local television station" (as cited in Noble,

1998a, Par. 18). Further, James J. Stukel, President of University of Illinois at Urbana-Champaign advocated that "the University of Illinois will lead nationally in creating, transferring, and integrating advanced technologies, in our research, teaching, outreach and operations" (as cited in "Teaching", 1999, p.5) and that "the Internet, and the technology which supports it, may well constitute the third modern revolution in higher education", following the land-grant movement in the 19th century and technology revolution in the 20th century, which made higher education accessible to the middle class and to the populace respectively.

From the Student's Perspective

Match of Student Characteristics and Distance Education.

As we have said before, distance learners are often assumed to be older part-time students. Nevertheless, a report filed by the University of Illinois (" Teaching", 1999) found that although nontraditional students make up a significant proportion of distance learners, the proportion is not as high as one is led to believe. While adult learners are using the distance education programs, the young and traditional students have increasingly begun to realize the new opportunities. NEA (2000) even reported that " in contrast to stereotypes of distance learning students as older, part-time students, NEA faculty teach as many younger students as older students and as many full-time students as part-time students" (p.7). However, NEA expressed concern over the generalizability of the program.

Flexibility in time and place (see Johnson et al, 2001; Petracchi, 2000; Rosenbaum, 2001) and a sense of control (Petracchi, 2000) are often among the reasons for learners

to choose the distance class. Petracchi compared the experience of students in interactive TV (ITV) and those in on-campus class and found that both groups of students had a positive attitude towards their learning process. The ITV students especially appreciated the flexibility, arguing that the greatest benefit was a sense of control over the learning environment, freedom to watch whenever they could, absorbing the materials at their own pace. They expressed the wish to enroll in distance education programs again.

Not all students learn in the same way. Montgomery (1998) classified students into active learners and passive learners, intuitors and sensors, visual and verbal learners. Active learners, who take up the majority of students, particularly appreciate the interaction and like to participate in the learning process. Montgomery argues that using multimedia allows students to take an active role in learning in ways that the traditional learning format cannot afford. This implies that online education may work better than other formats for active learners.

The realization that not everyone is suitable for distance learning has led many universities (e.g., University of Illinois, Stanford and UCLA) to use a self-evaluation quiz to help prospective students determine whether online format is suitable for them. Further, some universities provide lists of characteristics of successful online learners. For example, the list of the University of Illinois includes,

1. Be open minded about sharing life, work, and educational experiences as part of the learning process
2. Be able to communicate through writing

3. Be Self-motivated and self-disciplined
4. Be willing to "speak up" if problems arise
5. Be willing and able to commit to 4 to 15 hours per week per course
6. Be able to meet the minimum requirements for the program
7. Accept critical thinking and decision making as part of the learning process
8. Have access to a computer and a modem
9. Be able to think ideas through before responding
10. Feel that high Education quality learning can take place without going to a traditional classroom

(See http://illinois.online.uillinois.edu/IONresources/onlineoverview/studentprofile.html)

Colorado Community College & Occupational Education System enumerates similar characteristics (http://ecollegelogin.ccconline.org/index.real?action=islearn). It follows that only the self-motivated and self-disciplined students, with adequate reading and writing ability, good time management skills and comfort level with computers are most likely to be successful online. Students should also be aware that their responsibility is almost the same, if not more, in online learning as in traditional learning setting (IHEP, 2000).

Comparison Between Online Education and Traditional Education

Education quality is one of the most important concerns for the faculty (NEA, 2000; "Teaching", 1999) and the students. Education quality in distance format is often compared with the traditional classroom teaching. Online programs often advertised the close imitation of face-to-face education as one of their special features.

The majority of recent reports argue that there is no significant difference between online learning and traditional learning in terms of student grades, test scores, and other measures of student achievement (Worley, 2000). Further, no difference is found in the students' overall ratings of course content, rigor and other aspects of distance learning. Nor have the majority of researchers found significant differences in students' ratings of the instructors' effectiveness, contribution to learning, and overall quality (Spooner et al., 1999). Finally, there is no significant difference in students' opinions about teaching skills, such as clarity and effectiveness of presentations, ability to hold interest, motivation to perform well.

The most comprehensive book addressing this question was offered by Russell (1999/2001) entitled "No significant difference". He later created a website devoted to the topic(http://teleeducation.nb.ca/nosignificantdifference). Russell collected over 300 research reports, summaries and papers since 1928 that found no significant differences. Since its publication, the study has been under heavy attack (for specific criticism, see Worley, 2000). Russell also devoted a section to posting researches that have found significant differences (http://teleeducation.nb.ca/significantdifference). Most of the findings posted in this section concluded that online format is better than traditional classroom learning.

Phipps and Merisotis (1999) completed a review on the effectiveness of distance education in higher education and concluded that no matter what technology is used distance learning course is as favorable as classroom learning, and distance students are highly satisfied and have similar grades or test results. More recently, Johnson et al.

(2001) also drew a similar conclusion that although the students in the traditional classroom setting are slightly more positive about the instructor and overall course quality, there was an equal distribution of overall learning outcomes between the two groups.

Some researchers (e.g., Dumort, 2000; Rosenbaum, 2001) even propose that online education can do better since traditional students often use a passive approach while online learners have to be active. Distance learners also have more freedom to work at their own pace, time, and place, and thus have more control. When distance learning is related to everyday business practices, distance learners actually do better (Rosenbaum, 2001). Therefore, students' active involvement in online learning can have an outcome as good as or even better than classroom learning. However, Hiltz, Coppola, Rotter & Turoff (2001) cautioned that when we just use Internet to post materials and send back homework, the learning results are poorer than in traditional instruction.

Nevertheless, critics are skeptical about these positive findings. Clow (1999, p. 101) reported that interactive distance learners felt " the instructor did not come across as well as in person, did not seem to be as enthusiastic, and was not as aware of students not grasping the material." In the student's view, distance class demands more time and work; the objectives often are not stated as clearly; the course is considered harder. In Clow's view, students choose distance learning because they have to. The instructor should give students the "motivational human touch" ("Teaching", 1999, p.3), which is lacking in distance instruction. Thus, Clow concluded that distance students may not be learning materials as well as those enrolled in traditional classes.

Another criticism is that the comparison is not systematic (Worley, 2000). All the researches tend to focus on a specific course rather than on academic programs as a whole. In most studies, only performance in a single isolated course is measured rather than the command of a body of knowledge or the application skills of this knowledge to other courses. Worley suggested that research should explore the relationship between "the learner, the learning task, and a particular technology". Worley further argued that to compare the online learning with the traditional learning is not the right question to ask since this question privileges technology. Other factors, such as learning tasks, learner characteristics, and the instructor, should be more important than technology. The right question ought to be what kind of teaching-learning strategy works best, regardless of the medium. Thus a student-centered paradigm is needed in both teaching and research.

In short, not everyone is suitable for distance learning. Only those who are highly motivated and self-disciplined enjoy the highest likelihood to be successful. Thus, we highly encourage prospective students to critically assess whether they have the necessary characteristics for successful online learning. Although the majority of the research reports that there is no significant difference between distance learning and traditional learning, the conclusion is still open to discussion and we still need to be cautious about the comparative standards.

From the Faculty's Perspective

Supportive Faculty vs. Protesting Faculty

In order to achieve the same high quality of education as the traditional

counterparts, distance education requires more labor and time (NEA, 2000; "Teaching", 1999). However, there is often little or no compensation for the faculty who teach distance courses.

Nevertheless, NEA report indicates that most faculties maintain a positive view towards online education; faculties who teach web-based courses hold a more positive view towards distance learning. One explanation is that faculties consider the new opportunities opened up and a possible richer curriculum offered by online teaching outweigh their comparatively more personal concerns. Journal of Asynchronous Learning Networks devoted a whole issue in September 2000 on faculty satisfaction (see www.aln.org/alnweb/journal/jaln-vol4issue3.htm), examining what factors lead to faculty satisfaction and what factors to dissatisfaction. Most of the reports indicate that faculties enjoy a high level of satisfaction with distance instruction. For instance, a survey of the State University of New York (SUNY) Learning Network, an online program for 64 colleges and nearly 40,000 students within SUNY system, shows, "...100% of faculty reported that they were either satisfied or very satisfied with the SUNY learning network." (Fredericksen, Pickett, Shea, Pelz & Swan, 2000, par.1). These findings imply that distance education continues to have a very promising future.

However, the unrealistic vision and administration-centered advocacy of distance education is problematic and causes many protests from the faculty.

An article entitled " Wiring the Ivory tower: But will on-line courses lower standards" by Business Week (1999, August 9) described the future virtual universities as an entity without dorms, sports fields, or expensive professors. Unext was portrayed

as the ideal future model virtual university, which planned to spend $1million on each course to ask the star professors to produce video-tapes and then employ low-paid part-time instructors to interact with the students and grade assignments during the course delivery.

This vision brought much skepticism towards distance programs as a whole. James Perley, chair of AAUP's committee on Accrediting of Colleges and Universities expressed his strong disagreement on the accreditation of a virtual university, Jones International University, arguing that, "Only a truly remarkable program could duplicate in a virtual world the mind expanding experiences of a student on a university campus." (Perley, 1999, pp. 1-2, as cited in Dyrud, 2000, Par. 5). Obviously, distance programs, according to Perley, have not reached the standard high enough to be accredited.

When developing online courses, universities are increasingly seeking the partnership with the industry, which often views higher education as the last resort to create new revenues (see Noble, 1998a, 1998b, 1998c). Thus, online learning has become "a buying and selling course, not a learning course" (Noble, 1998c) and distance education has evolved into "cash transaction".

The money-driven focus of distance learning might have caused many protests from the faculty. In 1997, UCLA launched "Instructional Enhancement Initiative", with the partner of The Home Education Network (who later changed the name to Onlinelearning.net), which required all 3800 courses of arts and sciences to be put online. The faculty members vigorously resisted this initiative and refused to sign away

their rights neither to the university nor to the company. As a result, only 30% of all courses actually were online by the end of the academic year. Professors at the York University-- the third largest university in Canada--also launched a two-month strike with great success to fight against the university's impending agreement with private corporations to commodify online education (Noble, 1998a). A similar occurrence transpired at the California State University system. The faculty and students vigorously and successfully fought against the implementation of the California Educational Technology Initiative (partnership with Microsoft, GTE, Hughes, and Fujitsu), an arrangement to give these firms exclusive rights over the development of the technological infrastructure and over the online courseware. What's more, at the University of Washington in Seattle, over 850 faculty members signed a letter to the governor, asking him to reconsider his statewide distance initiative plans. At Florida's Gulf Coast University, over half of the faculty openly fought against a suggested policy on copyright, which would grant ownership of distance delivery courses to the university (Noble, 1998c).

On the surface, the ownership of Intellectual properties seems to be the cause of most of the protests. However, Noble maintained that it indicated that the faculty and the students did not yield to the greed of the administrators and the company. One of the most important reasons lies in the lack of the faculty's involvement. Feenberg (1999)-- a pioneer who has vigorously promoted distance education since 1980s-- also pointed out that the absence of pedagogical model in the present distance education is the reason for his colleagues in the San Diego State University system to resist the new

technology.

Furthermore, the ownership of Intellectual properties could become an important way to ensure the education quality ("Teaching", 1999). One of the arguments that some university administrators use is that the faculty use the university's substantial resources to produce the multimedia courseware, then universities should have the ownership of the copyright (Agre, 2000). However, Agre contended that if the big production cost should be transitional, then it is a disaster to change the existing copyright rules. Thus, we believe Intellectual property policy should make it possible for faculty to own online courseware. Knowledgeable and hard-working faculty should continue to shoulder the responsibilities to produce content and deliver information.

To summarize, most faculty hold a positive attitude toward distance education because of the new opportunities it can provide, if they are involved. However, without the faculty involvement, we may not only witness negative attitudes from the faculty but also resentment and protests. One of the reasons that the wide-spread protests occurred is because of the absence of faculty involvement during early stages of planning.

Interaction vs. Interactivity

The delivery of online courses is not just the posting of information and the grading of assignments. Faculty should play the same role in distance education as in traditional classroom (Chea, 2000). The faculty, who hold the roles of "content experts, learning process design experts, process implementation managers, motivators, mentors and interpreters," (Phipps & Merisotis, 1999, p.8) cannot be replaced by technology

"without significant quality losses" (1999, p.8). In fact, the success of distance learning is closely related to the efforts that the instructors make to create an interactive learning environment. Teaching expertise may be the most crucial factor for online success although some level of technical knowledge is also important (Arbaugh , 2000).

Otto Peters, author of Learning and Teaching in Distance Education, argues:

> If we take distance education seriously and understand it to be something more than the mere distribution and reading of study materials, we must provide sufficient opportunities for dialogue. If, in addition, we understand academic studies as a process in which the aim is education through *knowledge,* we cannot do without a considerable proportion of dialogical leaning and teaching in distance education (Peters, 1999, pg.39, as cited in "IHEP", 2000, p.17).

Thus, a small teacher/student ratio (usually one to less than 20 or 25) is needed to ensure that the instructor has the time and energy to interact with the students (CHEA, 2000; IHEP, 2000; NEA,2000; "Teaching", 1999)

What's more, interaction with professors and informal communication with classmates is an indispensable part of the students' socialization and education process. "Teaching" (1999, p.1) argued "... the ongoing physical and even emotional interaction between teacher and students, and among students themselves, was an integral part of a university education." Since more mature students have already had some socialization experience, distance education may be more suitable to the more mature graduate or returning students. It is not appropriate to provide the entire undergraduate programs online because undergraduates still need the socialization experience.

Furthermore, we will find that students also prefer to be taught in an interactive way although they also expect that the instructors will give lectures (Sander et al., 2000). Students rank formal lecture, role-play and student presentations as the least favored learning methods. When asked to assess the qualities of good teachers, students select "teaching skill" as the most important, and "approachability" as the second most important.

The lack of physical interaction in the education process may cause many problems, such as a great degree of flaming and isolation (Dyrud, 2000). Hara and Kling's controversial study (2000) also found that the difficulty and distress experienced by students online might not be adequately understood. Working alone at night caused many complexities and depressing experiences. Social bonds are very important for online learners. The University of Illinois at Urbana-Champaign (UIUC) requires distance learners to stay in campus dorms for two weeks over summer to attend the "boot camp", through which students can meet with their fellow classmates and take an introductory course (Carnevale, 2000). Haythornthwaite, an assistant professor in the UIUC online program, argued that " [the program] it's about building the community…It's important in this profession that people feel connected" (Par. 5).Without adequate social support, students will feel isolation and depression in the learning process and may drop out of the program .

To summarize, faculty plays the same role in distance education as in traditional instruction. Any attempt to replace faculty with technology will erode the quality of education. The interaction between faculty and students and communication among

students are important factors to guarantee education quality. A low instructor/student ratio is required. Instructors need to spend more time cultivating their teaching skills.

From the Administrator's Perspective

Distance education is promoted mainly by the administrators as an economic issue ("Teaching", 1999; see also Noble, 1998c). Administrators consider new technology as a way to obtain new revenues and accommodate a large number of young people and returning students (Feenberg, 1999). The possibility of cost saving is perhaps the most important motivation for universities to deliver online courses. Starting from 1970s, cost reduction has driven university administrators towards employing more part-time faculty. From 1970-1995, the increase of full-time faculty is about 50% while that of part-time faculty is about 250%. At community college, part-time faculty members are in the majority. The Florida State University has started to hire some part-time faculty since 1997 and now part-time faculty members are the majority. In this commercialization process, business companies and administrators take a leading role while faculty members have a low status and little power.

Some inexperienced administrators often mistakenly believe that the online education is less costly than the print-based medium. However, distance learning is unlikely to be less costly compared with traditional face-to-face education (see Inglis, 1999; NEA, 2000; "Teaching", 1999). The cost saving in online courses is an illusion because most of the cost is due to the stuff's time in delivering and developing the distance education materials. The vision of inviting a " star" professor to develop the course and then using part-time instructors to deliver the course is not likely to work

well since instructors have to be familiar with the course materials. Meanwhile, high education quality requires a low student/instructor ratio. Consequently, the cost reduction cannot be realized without a significant loss of education quality.

In reality, new technology is often added to the existing technologies rather than replacing the old one (Dumort, 2000), which means to use more expensive way to do the old thing. Thus, if an institution is considering shifting to online course, it should consider the shift from a strategic point of view (Inglis, 1999).

In the near future, online education is not likely to be a new revenue source. Without good planning, distance education can turn out to be a financial disaster. We can see this from the experience of the Western Governor's Virtual University. After spending millions of dollars for this program and expecting the enrollment to be several thousand, only 75 called to ask for information and only 10 students finally enrolled. Thus, administrators and politicians should be realistic about the economic prospect.

Notable Programs that Work, and Why

In this section, I will briefly introduce two programs that work very well and analyze the reasons for their successes.

SUNY Learning Network

The Learning Network (SLN) at SUNY (http://sln.suny.edu) started as only a regional project in the Mid-Hudson Valley, which includes eight SUNY campuses. In 1999-2000 school year, the number of annual courses increased to 1000 and the yearly student enrollment increased from 119 in 1995-96 to more than 10, 000 in 1999-2000. The total enrollment was over 40, 000 students across 64 colleges. Research indicated

that the majority of both students and faculty are satisfied with the online courses (Fredericksen, E., Pickett,A., Shea, P., Pelz, W. & Swan, K., 2000a, 2000b).Why it works? Besides very promising technical consideration, some of the most unique characteristics are:

1. Faculties are intensively involved into the course development. The instructor is the one who develops the course so that he or she has the full understanding of the course material and how it functions in online setting. Instructors are asked to conceptualize the courses, comparing what they would do in classroom teaching with the expected online teaching, given the limitations and unique features of online environment.

2. Faculties get extensive technical support and training during the course development and implementation. Due to the assistance of multimedia instructional design partner, faculties get one-on-one support with an instructional partner. Faculties have the autonomy in designing courses and are allowed to own the copyright of the courseware. They also get compensated to teach online programs.

3. Technically, they develop user-friendly programs so as to enable the students to feel that their individual needs are specifically addressed.

4. Another important point is: the online initiative stresses student participation and the interaction between the faculty and students and the interaction among students, not only in the program design but also in the instructor's teaching process. For instance, in their programs, normally there are some ice-breaking activities in the first module so as to facilitate students to know the course and fellow classmates. Programs also stress the community building in students' learning. Faculties are required to provide something

new every two or three days and to log on frequently to ensure that there is discussion going on. If there is no substantial discussion, the faculty will use strategies to ensure participation, such as asking specific students to clarify a point or commenting on the postings themselves, or e-mailing individual students to find out what's going on. At the same time, the faculties are required to give immediate response to students' emails, to return assignments and answer questions immediately.

5. A small instructor/student ratio. For instance, Herkimer County Community College (HCCC), a medium-sized, two-year college in upstate New York recruited 36 students for three SLN courses in fall 1997, 55 for five courses in fall 1998, 206 for 12 courses in spring 1999, and 390 for 26 courses in fall 1999.

The Student Satisfaction Survey in the spring 1999 indicated that students were very satisfied with the online learning. Interaction with the instructor contributes mostly to the perceived learning. Levels of participation and interaction with fellow classmates are also very important contributors to students' satisfaction.

University of California Extension's On-line Writing Programs

In January 1996, UC Extension launched its online program through America Online (http://learn.berkeley.edu), as a joint program of the statewide Center for Media and Independent Learning and UC Berkeley Extension. This online program then expanded from 9 courses in 1996 to over 100 courses in 2000 (Almeda & Rose, 2000). Their students are from 47 states (about two-thirds are from California), the District of Columbia, Guam, and foreign countries, including Russia, Japan, Mexico, and Canada. This program has also achieved some relative success. In most cases, the person who

develops the course also teaches it. Despite the fact that some courses are not taught by the producers a few years later, adequate training and support are provided for all standing instructors throughout their teaching processes. In the course design, technical staff and the course author are involved so that they have an adequate understanding of the effectiveness of the course. This program stresses the one-on-one interaction between the students and the instructor, and students' contact with other fellow students, and even online group discussion. The number of students per course is relatively low, with 24 in 1998, 17 in 1997 and 12.4 in 1996. Although the administrator expects the number to be rising, it is questionable that they will achieve success with a higher faculty/student ratio given the fact that most of the faculty feel that their workload is more than or the same as the traditional counterparts. Also unless instructors receive adequate compensation, the feeling of satisfaction may be crucial for excellent teaching.

Summary and Conclusion

The past decade has witnessed a rapid expansion of Internet-based courses in higher education. Although the distance education program originally considers nontraditional students as its target, more and more young people begin to realize the new opportunity. Not everyone is suitable for online education. The self-motivated and self-disciplined students are most likely to succeed in online courses. Thus, it would be a mistake to assume that the click virtual university will replace the mortar university. Just as in traditional learning, different learning styles and expectations also affect the students' experience. As expected, students often consider flexibility and a sense of

control as two of the most important reasons for choosing online courses. Thus, it is important to maximize the two advantages in designing online courses. This phenomenon is in consistence with the characteristics of the original target audience—adult learners with work responsibility and family commitment, or who simply cannot go to campus to attend classes.

One of the most frequently asked questions is whether there is significant difference between the distance learning and traditional learning. Most of the recent literature demonstrates that there is no significant difference in terms of the student's course grade, rating of the course content and the instructor and other outcomes. But critics argue that this comparison may not be adequate since it is not systematically conducted. Thus, the complete replication of the traditional classroom education may not be adequate for online setting. A shift of paradigm may be necessary. In all these arguments, one point is clear that if distance education is done properly, it still has a promising future.

Most of faculty members view distance education positively and some even express great satisfaction with distance programs. However, the lack of the faculty's involvement is a serious problem, which may have caused the past wide-spread protests. We believe that faculty involvement in the course design, development and implementation is crucial for not only the implementation of distance programs but also for the education quality. The best way is to get the person who teaches the course to develop the online course. At the same time, the faculty should be compensated for their work and allowed to own the copyright of the courseware they develop.

Instructors should have the same role in distance instruction as in traditional classroom. They should have the final say regarding the materials and the best way to teach the course.

Online education does create its own problems, such as isolation and depression. The establishment of social bonds is essential. Interaction between the student and the faculty and among students is extremely important for online success. As a matter of fact, the instructor's ability to create an interactive environment is prerequisite for quality education. The community building among students through group discussion or email contact is another important contributor to the student's successful learning experience. In order to guarantee that the instructor has the time and energy to interact with students without delay, it is necessary to maintain a low instructor/student ratio, normally fewer than 25 students per instructor. It follows that cost reduction entertained by university administrators is not likely to be realized in the near future. The learning model, which employs a "star" professor to develop the course and then hire low-paid part-time faculty to interact with the students and to grade assignment, is not going to work well as far as pedagogy is concerned.

It is advisable not to have the whole undergraduate program online since undergraduate students still need the formal and informal face-to-face interaction or encounter for socialization purpose. However, we do believe that if professors make an effort to reach students, create an atmosphere suitable for learning, minimize technology limitations and maximize its advantageous features, online learning and teaching can be done with high quality. It is reasonable to expect that the future

university will offer a mix of on-campus and internet-based courses to accommodate the increasing requirement for accessibility, diversity, flexibility and affordability of education service.

Dutton's (1999) notion about the ecology of games offers some insight here. Different players-- the faculty, the students, the university administrators, software companies, etc.-- are playing different games in different ways with different purposes. In order to fully understand distance education, we need to understand the games different players are playing and see whether their goals have been reached and evaluate what's in common in those games so as to find a balanced solution.

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Figure 1. Online Journals and Websites Focusing on Distance Education Debate

References

Journals :

The American Journal of Distance Education (published by Penn State University) http://www.ed.psu.edu/acsde/ajde/jour.asp

Created in 1987, the *AJDE* is the internationally recognized journal of research and scholarship in the field of American distance education. It is designed for use by teachers in schools, colleges, and universities; trainers in corporate, military, and professional fields; adult educators; researchers; and other specialists in education, training, and communications. The *AJDE* encourages the submission of articles about methods and techniques of teaching at a distance, about learning, and about management and administration, but also encourages authors to write about policies, theories, and the values that drive distance education. Articles should be based on research, though all methods and approaches to research are welcome. Authors are specifically advised to ensure that their work is appropriately grounded in a review of existing literature.

The Journal of Asynchronous Learning networks (published by Vanderbilt University) www.aln.org/alnweb/journal/jaln.htm

The Journal of Asynchronous Learning networks publishes research articles that describe original work in ALN, including experimental results. Traditional standards for review will be adhered to and authors are encouraged to provide quantitative data. In addition, major reviews and articles that outline current thinking will be accepted

ALN Magazine (published by Vanderbilt University)

http://www.aln.org/alnweb/magazine/alnMaga.htm

Educause Quarterly (formerly Cause/Effect)

www.educause.edu/pub/ce/cause-effect.html

Educause Quarterly is a practitioner's journal for college and university managers and users of information resources--information, technology, and services--published quarterly by EDUCAUSE. Written by campus practitioners, articles are peer-reviewed prior to publication. Articles related to planning for, developing, managing, evaluating, and using information resources on college and university campuses are welcomed.

Educom Review (published by Educause) http://www.educause.edu/pub/er/erm.html

Educom Review explores the changing ways we will work, learn and communicate in the digital world of the 21st century. The accelerating pace of development in computer and communications technology is transforming education. Educom Review monitors those development along with related issues in management, planning, law, and policy.

The Technology Source (published by University of North Carolina at Chapel Hill)

http://www.horizon.unc.edu/TS

The Technology Source is to provide thoughtful, illuminating articles that will assist educators as they face the challenge of integrating information technology tools into teaching and into managing educational organizations.

The Journal of Distance Education (published by the University of New Brunswick in Cannada). Http://www.hil.unb.ca/Texts/JDE/homepgENG.html

The *Journal of Distance Education* is an international publication of the Canadian

Association for Distance Education (CADE). Its aims are to promote and encourage Canadian research and scholarly work in distance education and provide a forum for the dissemination of international scholarship. Original material is published in either English or French

The Journal of Interactive Learning Research (published by the Association for the Advancement of Computing in Education) http://www.aace.org/pubs/jilr

The Journal of Interactive Learning Research (JILR) publishes papers related to the underlying theory, design, implementation, effectiveness, and impact on education and training of the following interactive learning environments.

Other websites

The Web of Asynchronous Learning Networks http://www.aln.org

The Web of Asynchronous Learning Networks is home to Journal of ALN and ALN magazine. In addition, it also serves as an online forum for the community of ALN researchers.

Educause http://www.educause.edu

Educause focuses on the management and use of computational, network, and information resources in support of higher education's missions of scholarship, instruction, service, and administration.

The Western Cooperative for Educational Telecommunications http://www.wiche.edu/telecom/

The Western Cooperative for Educational Telecommunications, founded by the **Western Interstate Commission for Higher Education** in 1989, is a membership-supported organization open to providers and users of educational

telecommunications. Members represent the higher education community, nonprofit organizations, schools, and corporations. The Western Cooperative responds to its members' needs by anticipating and directing change. It conceptualizes new institutional frameworks and delivery systems, assesses the potential of new technologies and learning resources, explores the needs of tomorrow's learners, and proposes appropriate public policy directions.

Association for the Advancement of Computers in Education

http://www.aace.org

Funded in *1981,* The Association is an international, educational and professional not-for profit organization dedicated to the advancement of the knowledge, theory, and quality of learning and teaching at all levels with information technology.This purpose of AACE is accomplished through the encouragement of scholarly inquiry related to information technology in education and the dissemination of research results and their applications.

United States Distance Learning Association http://www.usdla.org

The United States Distance Learning Association is a nonprofit organization formed in 1987. The association's purpose is to promote the development and application of distance learning for education and training. The constituents we serve include Pre-K through grade 12 education, higher education, home school education, continuing education, corporate training, military and government training, and telemedicine.

The NODE Learning Technologies Network http://www.node.on.ca

It is a not-for-profit electronic network facilitating information and resources sharing, collaboration and research in the field of learning technologies for post-secondary education and training.

Telelearning Network Centres of Excellence http://www.telelearn.ca

The TeleLearning Network of Centres of Excellence (TL•NCE) stimulates and tracks leading telelearning research advances in collaboration with university and industry partners throughout the world. Over 60 faculty from 28 Canadian universities are evaluating the effectiveness of new learning models, analyzing the cost-benefits and social impact of implementing telelearning, and creating new educational technologies.